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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,212	12/02/2003	Edward J. Koeneman	58482-010101	5429

7590 04/08/2008
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EXAMINER

FOREMAN, JONATHAN M

ART UNIT	PAPER NUMBER
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3736

MAIL DATE	DELIVERY MODE
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04/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/727,212

Applicant(s)

KOENEMAN ET AL.

Examiner

JONATHAN ML FOREMAN

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2008 and 27 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 45-80 is/are pending in the application.
- 4a) Of the above claim(s) 1-28 and 45-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 69-71 and 73-80 is/are rejected.
- 7) ☒ Claim(s) 72 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/27/08 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 69 – 71 and 73 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,012,820 to Meyer.

In regard to claims 69 – 71 and 73, Meyer discloses a system for neuromuscular function reeducation and restoring physical function of at least one neuromuscular system associated with an at least one joint in a patient, the system comprising: a motion causing device (9) for assisting the one joint in movement, the motion causing device follows a protocol implemented by the controller; at least one force sensitive resistor sensor (Col. 4, lines 31 – 40) for measuring a parameter indicative of muscle resistance; at least one joint position sensor for measuring joint movement (Col. 6, lines 11 – 16); at least one neuromuscular electrical stimulating (NMES) system for providing neuromuscular stimulation to the at least one neuromuscular system (Col. 5, lines 1 – 9); an electronic memory system (41) that stores information related to the patient; at least one EMG

sensor (Col. 5, lines 22 – 29) that detects self-actuation of the neuromuscular system; and a controller implementing a protocol (Col. 5, line 22 - Col. 6, line 19). The stored information includes compliance and performance and can provide the information on command. The motion causing device follows a protocol implemented by the controller when self-actuation is detected by the at least on EMG sensor but is not detected by the at least one joint position sensor.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 74, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,012,820 to Meyer in view of U.S. Patent No. 6,010,468 to Grove et al.

In regard to claims 74, 75 and 76, Meyer discloses a motion causing device (9), but fails to disclose the motion causing device being an air-muscle that shortens in length upon inflation to cause the joint to pivot and includes at least one port for supplying air. Nor does Meyer disclose a microprocessor for controlling a valve to supply air to the air-muscle. Grove et al. disclose a system for restoring physical function of a neuromuscular system and teach a motion causing device being an air-muscle (133) that shortens in length upon inflation to cause the joint to pivot and includes at least one port for supplying air. Grove et al. teach a microprocessor for controlling a valve for supplying air to the air-muscle (Col. 12, lines 47 – 60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the motion causing device as

disclosed by Meyer to include an air-muscle as taught by Grove et al. in order to provide the system with an easily controllably motion causing device.

6. Claims 77 - 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,012,820 to Meyer in view of U.S. Patent Application Publication No. 2002/0143277 to Wood et al.

In regard to claims 77 - 80, Meyer discloses obtaining measurements from an EMG sensor and a force sensor. However, Meyer fails to disclose displaying the measurements from the EMG sensor and the force sensor. Wood et al. disclose a system for restoring physical function of a neuromuscular system and teach displaying measurements from an EMG sensor and a force sensor [0055] for a patient to monitor the compliance and performance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as disclosed by Meyer to include a display for displaying the measurements made by the EMG sensor and the force sensor as taught by Wood et al. in order to encourage patients to continue with their exercises [0010].

Allowable Subject Matter

7. Claim 72 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed 2/27/08 have been fully considered but they are not persuasive. Applicant asserts that Meyer discloses an electric motor not for assisting in joint movement but rather for resisting joint movement. However, the motor disclosed by Meyer provides a force against the joint and assists the joint in movement (Col. 5, line 54 - Col. 6, line 1). Additionally,

Applicant asserts that Meyer fails to disclose a controller for implementing a protocol when both self-actuation is detected by the EMG sensor and self-actuation is not detected by a joint position sensor. However, the Examiner disagrees. The controller implements a protocol (Col. 5, lines 54 - 57) independent of the EMG sensor and the joint position sensor. Therefore, when self-actuation is detected by the at least one EMG sensor but not by the joint position sensor, the control still implements a protocol.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN ML FOREMAN whose telephone number is (571)272-4724. The examiner can normally be reached on Monday - Friday 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571)272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. M. F./
Examiner, Art Unit 3736

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736